

Engineering Student Projects Showcase

Friday, 01 May 2009

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Research and design projects are essential components in engineering education. On May 1, 2009, engineering senior students presented the following senior design projects:

- Thermal Stress Analysis of Exhaust Manifold
- CFD Study for Hydrogen Reformer Furnace
- Assessment of Energy Efficiency of Data Centers
- Indoor Contaminant Dispersion Simulation
- Ternary Phase Diagram Tutorial
- Moonbuggy 2009
- Tests for Energy Savings
- Prevention of Erosion of a Detention Pond
- Virtual Reality in Biomedicine (Meiosis Simulation)
- Robotic Soccer Team
- Optimization of Efficiency for a Remotely Piloted Vehicle
- Processing of MRI Images/Medical Imaging Visualization
- Larry Car Positioning and Alignment Using RFID
- SAE Formula One Race Car Design
- AC Vector Motor Control
- Network Simulation VOIP
- Design and Implementation of a SWAP Scheduler
- Electric Vehicle Power Management System
- Electric Vehicle Propulsion Design
- Virtual Reality in Robotics
- Collision Avoidance System
- Speech Modification System
- Artificial Neural Network for Reservoir Operation
- Wireless Wattmeter
- Noise Suppression for Functional Magnetic Resonance Imaging (fMRI) Using Non-Negative Matrix Factorization
- RFID Steel Coil Storage System
- Wireless Channel Weir Instrumentation
- Wireless Instrumentation of a Synchronous Motor
- Maintenance Screens
- Wireless Motor Instrumentation w/ Matlab

Engineering graduate students made the poster presentations as their thesis research or independent study research in the following topics:

- Municipal Solid Waste Characterization study for Indiana
- Construction of a web based tutorial of 3D visualization of ternary phase diagrams
- Performance evaluation of various multimedia protocols over Gigabit Ethernet based campus network
- QoS Performance of an Optical Burst Switching (OBS) Network Model using OPNET
- Rapid Bacterial Identification Using Optical Scattering Images
- Human Brain DTI Neuronal Fiber Visualization
- Wavelet-based Image Classification for E. coli Categorization
- Modeling and Attitude Stabilization of a Coaxial Double Rotor Micro Flying Robot
- A Vision-based Autonomous Lane Navigation System for a Mobile Robot
- System Identification and control implementation of a Micro Flying Robot
- Control system design and modeling of a multiple field wind turbine generator.

- Effect Of Shading on Output Power of Photovoltaic Cells
- Optimization of Operating Parameters for Anaerobic Hydrogen Production
- Development of Clad Modified Optical Sensor
- Performance Evaluation of Ultrafiltration Membrane in Oil Refinery Wastewater
- Application of Ultrasonic Wave to Mitigate Fouling in Membrane
- Reversibility and Sensitivity of Fiber Optics Sensor in the Presence of NH₃
- Developing Training termination index for Neural Network Models
- Investigation of different turbulent models for indoor air quality simulation
- Chromosome Recognizing and Karyotyping
- Virtual Chromosome Modeling
- Research on Deformation in Virtual Reality
- Cutting with Finite Element Method in Visualization
- An Interactive Chromosome Preparation Lab Development

- An Interactive Meitosis Learning Tutorial
- Numerical Modeling of Coal Fired Power Generation Components
- Numerical Simulation of Blast Furnace Tuyere
- GOHT Furnace Inlet Piping Study
- Experimental Study of Liquid Level in a Blast Furnace Hearth
- CFD Application in Steel Industry
- Prediction of Blast Furnace Erosion Profile Using CFD
- Virtual Reality Visualization for Industrial CFD Simulation